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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,859	10/18/2004	Hanan Herzberg	37476	5049

67801 7590 07/21/2008
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EXAMINER	
FLORES, LEON	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
07/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/511,859	HERZBERG, HANAN	
	Examiner	Art Unit	
	LEON FLORES	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) *1-3,14,17,19,28,30-32,35 and 36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-13, 15-16, 18, 20-27, 29, 33-34, 37-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims (10, 16, 18, 52-53) have been considered but are moot in view of the new ground(s) of rejection.

Response to Remarks

Applicant asserts that *"the Examiner has indicated in the present Office Action, mailed January 17, 2008, that claims 10, 16, 18, and 45 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 10, 16, l8, and 45 have been rewritten in independent form including all of the limitations of the base claim and any intervening claims, and are therefore deemed allowable".*

The examiner agrees. In the previous communication, the examiner indicated claims 10, 16, 18, and 45 allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, after conducting another search, the examiner has issued a new ground of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims (1, 4-9, 12, 27, 39, 53) are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1) in view of Javitt et al. (hereinafter Javitt) (US Patent 6,002,677), and further in view of Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2)

Re claim 52, Van Den Brink discloses a method of analyzing the performance of a modem connection, comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig 1 & ¶s 87-97); collecting data and other signals passing on the communication link, between the end modems, through the line interface (See fig 1 & ¶s 87-97); injecting through the line interface noise. (See fig. 1: 8)

But the reference of Van Den Brink fails to explicitly teach that wherein the injected noise does not interfere with voice frequency bands of the communication link.

However, Javitt does. (See col. 3, lines 44-47) Javitt discloses that wherein the injected noise does not interfere with voice frequency bands of the communication link. ("prior to using voice committed frequencies" "insert background noise")

Therefore, taking the combined teachings of Van Den Brink and Javitt as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, in the manner as claimed and as taught by Javitt, for the benefit of precluding any noise from interfering with voice.

The combination of Van Den Brink and Javitt disclose the limitations as claimed, except they fail to teach determining, by a processor, an information content of one or more data and other signals transmitted between the end modems responsive to data and other signals collected through the line interface; and displaying information on the modem connection, responsive to the determined information content.

However, Nakamoto does. (See figs. 1A, 2-6 & col. 5, lines 40-49 & col. 3, lines 48-51) Nakamoto discloses a system for testing networks. This system is comprised of testing apparatus, processing unit, and a user interface. The latter may be a typical workstation computer equipped with a central processing unit (CPU) capable of analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding.

Therefore, taking the combined teachings of Van Den Brink, Javitt and Nakamoto as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Webster, as modified by Javitt, in the manner as claimed and as taught by Nakamoto, for the benefit of monitoring network traffic.

Re claim 4, the combination of Van Den Brink, Javitt and Nakamoto fails to teach that wherein connecting the line interface to the communication line comprises

connecting at a point at least two times closer to one of the modems than the other modem.

However, Van Den Brink does teach that the line interface being placed at a specific placed at a distance closer to one of the modems, and farther away from the other modem. (See fig. 1) Furthermore, this type of connection may be considered to be a designer's choice since it is up to the user/designer to decide where he/she wants to place the testing device.

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, for the benefit of obtaining compensation for any restrictions associated with the transmission of signals into the line.

Re claim 5, the combination of Van Den Brink, Javitt and Nakamoto further discloses that wherein connecting the line interface to the communication line comprises connecting at a point at most two times closer to one of the modems than to the other modem. (This claim has been analyzed and rejected in view of claim 4 above.)

Re claim 6, the combination of Van Den Brink, Javitt and Nakamoto further discloses that, wherein collecting signals passing on the communication link comprises collecting without sending to either of the modems acknowledgment signals or any other modem tangible signals. (In Van Den Brink, see fig. 1 & ¶ 93. The line interface is placed in between the two modems. Its function is to analyze the quality/characteristics

of the line by measuring/examining the signals flowing through the line. Furthermore, one skilled in the art would know that it doesn't need to send any acknowledgement or signals to any of the modems at each end.)

Re claim 7, the combination of Van Den Brink, Javitt and Nakamoto fails to explicitly teach that wherein displaying information on the modem connection comprises displaying the contents of one or more modem negotiation signals.

However, the reference of Nakamoto does teach a central processing unit (CPU) capable of analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding.

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, for the benefit of monitoring network traffic.

Re claim 8, the combination of Van Den Brink, Javitt and Nakamoto further discloses that wherein displaying information on the modem connection comprises providing information on noise levels on the connection. (In Van Den Brink, see fig. 7)

Re claim 9, the combination of Van Den Brink and Nakamoto fails to disclose that wherein providing information on noise levels on the connection comprises suggesting, by the processor, possible sources of the noise.

However, the reference of Van Den Brink does teach a Graphical User Interface (GUI) which shows the properties of cross-talk noise on the line. (See fig. 7)

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Nakamoto, for the benefit of optimizing the communication link.

Re claim 12, the combination of Van Den Brink, Javitt and Nakamoto further discloses, wherein displaying information on the modem connection comprises displaying information on signaling signals transmitted in parallel to data transmission. (In Nakamoto, see col. 5, lines 40-49)

Re claim 27, the combination of Van Den Brink, Javitt and Nakamoto further discloses that, comprising extracting the data transmitted on the modem connection from the signals collected through the line interface. (In Nakamoto, see col. 5, lines 40-50)

Re claim 39, the combination of Van Den Brink, Javitt and Nakamoto further discloses that wherein determining the information content on one or more signals comprises determining a bit content. (In Nakamoto, see col. 5, lines 40-49)

Claim 53 has been analyzed and rejected w/r to claim 52 above.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1), Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 52 above, and further in view of Webster et al (hereinafter Webster) (US Patent 5,425,052)

Re claim 11, the combination of Van Den Brink, Javitt and Nakamoto fails to explicitly teach that determining, by the processor, information on the symbol mapping used by the connection, based on the collected data and other signals.

However, Webster does. (See col. 1, lines 34-52) The reference of Webster does teach that the demodulators contain the necessary signal processing techniques to compensate for any distortion present in the separated signals due to the two wire transmission line. Furthermore, one skilled in the art would know that if the demodulators are capable of providing compensation due to the line, then the symbol mapping of the connection must be known priori in order to estimate the impairments of the channels and to provide compensation.

Therefore, taking the combined teachings of Van Den Brink, Javitt, Nakamoto, and Webster as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Webster, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Webster, for the benefit of optimizing the communication link.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1), Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 52 above, and further in view of Zuranski et al. (hereinafter Zuranski) (US Patent 6,445,733 B1)

Re claim 24, the combination of Van Den Brink, Javitt, and Nakamoto fail to disclose identifying data retransmissions and providing suggested causes of the data retransmissions.

However, Zuranski does. (See col. 9, lines 13-20) Zuranski discloses identifying data retransmissions and providing suggested causes of the data retransmissions.

Therefore, taking the combined teachings of Van Den Brink, Javitt, Nakamoto, and Zuranski as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Webster, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Zuranski, for the benefit of adjusting the data rate.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1), Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 52 above, and further in view of Downey (US Patent 6,690,720 B1).

Re claim 15, the combination of Van Den Brink, Nakamoto and Downey fails to explicitly teach injecting the noise comprises injecting noise in a manner which does not substantially interfere with a different connection passing on the communication link.

However, the reference of Downey does teach injecting noise onto the line in order to test the connection between the two modems. This type of testing is mainly used to test any analog or digital modem, including the various types of Digital Subscriber Loop (xDSL) equipment. Furthermore, one skilled in the art would know that that xDSL systems are comprised of pilot tones and data tones. The former is used to train the connection of the modems, and the other to carry information to the user. In the reference of Downey, noise is injected for training purposes. (pilot tones)

Therefore, taking the combined teachings of Van Den Brink, Javitt, Nakamoto, and Downey as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Webster, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Downey, for the benefit of optimizing the communication link.

Claims (25, 40) are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1), Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 52 above, and further in view of Linzy. (US Patent 6,718,384 B2)

Re claim 25, the combination of Van Den Brink, Javitt and Nakamoto fail to disclose that wherein displaying information on the determined characteristics comprises displaying a raw bit content of signals transmitted on the modem connection.

However, Linzy does. (See fig. 6 & col. 6, lines 30-46) Linzy discloses a graphical user interface (GUI) for monitoring communication networks. It is comprised of a terminal window containing passive TL1 commands (generic retrieves) designed to assist the user in acquiring information about the network. The TL1 messages may be obtained by "listening" to message traffic on communication network.

Taking the combined teachings of Van Den Brink, Javitt, Nakamoto, and Linzy as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Linzy, for the benefit of monitoring the communication network.

Re claim 40, the combination of Van Den Brink, Javitt and Nakamoto fail to disclose determining a stage of the modem connection, responsive to the collected data and other signals.

However, Linzy does. (See fig. 6 & col. 6, lines 30-46) Linzy discloses a graphical user interface (GUI) for monitoring communication networks. It is comprised of a terminal window containing passive TL1 commands (generic retrieves) designed to assist the user in acquiring information about the network. The TL1 messages may be obtained by "listening" to message traffic on communication network.

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Linzy, for the benefit of monitoring the communication network.

3. **Claims (33-34 & 37-38) are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1), Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 52 above, and further in view of Schneider et al. (hereinafter Scheneider) (US Publication 2004/0095167 A1)**

Re claim 33, the combination of Van Den Brink, Javitt, and Nakamoto further discloses determining at least one first frequency band to be disrupted. (In Van Den Brink, see fig. 1: 8)

But the combination of Van Den Brink, Javitt, and Nakamoto fail to teach connecting to the communication link a circuit which disrupts transmission of signals on the at least one first frequency band substantially without interfering with data and other signals of a second frequency band.

However, Schneider does. (See ¶s 74-75) Schneider discloses connecting to the communication link a circuit which disrupts transmission of signals on the at least one first frequency band substantially without interfering with data and other signals of a second frequency band.

Therefore, taking the combined teachings of Van Den Brink, Javitt, Nakamoto, and Schneider as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Schneider, for the benefit of not disturbing signals generated by the xDSL modems.

Re claim 34, the combination of Downey and Nakamoto further discloses that wherein determining the at least one first frequency band to be disrupted comprises determining a frequency band including a pilot tone frequency band of the modem connection. (In Van Den Brink, see fig. 1: 8 "testing of the modems are done using training sequences")

Re claim 37, the combination of Van Den Brink, Javitt, and Nakamoto fail to teach that wherein connecting the disruption circuit comprises connecting a circuit which shorts the at least one first frequency band without shorting the second frequency band. However, Schneider does suggest (See ¶s 74-75) that wherein connecting the disruption circuit comprises connecting a circuit which shorts the at least one first frequency band without shorting the second frequency band.

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Schneider, for the benefit of not disturbing signals generated by the xDSL modems.

Re claim 38, the combination of Downey and Nakamoto further discloses that, wherein connecting the disruption circuit comprises connecting a circuit which injects noise at the at least one first frequency band. (In Van Den Brink, see fig. 1: 8)

1. Claims (13, 20, 22-23, 26) are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1), Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 52 above, and further in view of Conklin et al. (hereinafter Conklin)(US Patent 5,991,881)

Re claim 26, the combination of Van Den Brink, Javitt and Nakamoto further discloses a method of analyzing the performance of a modem connection comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (In Van Den Brink, see fig. 1); collecting modem negotiation signals passing on the communication link, between the end modems, through the line interface (In Van Den Brink, see fig. 1 & ¶s 87-97); analyzing the collected modem negotiation signals. (In Van Den Brink, see fig. 1 & ¶s 87-97)

But the combination of Van Den Brink, Javitt and Nakamoto fail to specifically disclose providing a warning on a possible tapping of the communication link, responsive to the analysis.

However, Conklin does. (See figs. 1-3, 6 & col. 5, lines 5-7) Conklin discloses a system for network surveillance and detection of attempted intrusions. The system is

comprised of a network observation, intrusion detection, alert notification, evidence logging, and an incident analyzer/reporter.

Therefore, taking the combined teachings of Van Den Brink, Javitt, Nakamoto Conklin as a whole, it would have been obvious to one of ordinary skills in the art to have incorporated this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Conklin, for the benefit of preventing attempted intrusion into the network. (See abstract)

Re claim 13, the combination of Van Den Brink, Javitt and Nakamoto fail to specifically disclose performing signal tests on test signals collected through the line interface and comparing the results of the tests to negotiation signals, collected through the line interface, reporting test results from one of the modems.

However, Conklin does. (See col. 4, lines 30-51 & col. 5, lines 46-61) Conklin discloses a system for network surveillance and detection of attempted intrusions. The system is comprised of a network observation, intrusion detection, alert notification, evidence logging, and an incident analyzer/reporter.

Therefore, it would have been obvious to one of ordinary skills in the art to have incorporated this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Conklin, for the benefit of preventing attempted intrusion into the network. (See abstract)

Re claim 20, the combination of Van Den Brink, Javitt, Nakamoto Conklin further discloses identifying changes in the operation of the modem connection responsive to signals collected through the line interface and providing suggested causes of the changes. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 22, the combination of Van Den Brink, Javitt, Nakamoto Conklin further discloses identifying changes comprises identifying a bit swap. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

Re claim 23, the combination of Van Den Brink, Javitt, Nakamoto Conklin further discloses providing suggested causes of the changes comprises identifying, for at least one change, a noise that caused the change. (In Conklin, see col. 4, lines 30-51 & col. 5, lines 46-61)

2. **Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1), Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 52 above, and further in view of Downey (US Patent 6,690,720 B1).**

Re claim 21, the combination of Van Den Brink, Javitt, Nakamoto, and Conklin fails to disclose identifying changes comprises identifying a retrain.

However, Downey does. (See fig. 3 & col. 5, lines 1-23) Downey discloses a system for training/re-training the connection of two modems.

Therefore, taking the combined teachings of Van Den Brink, Nakamoto, Conklin, and Downey as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt, Nakamoto and Conklin, in the manner as claimed and as taught by Downey, for the benefit of providing training to the modems.

Claims (10, 41-45, 54-55) are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1) in view of Javitt et al. (hereinafter Javitt) (US Patent 6,002,677), and further in view of Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2)

Re claim 10, Van Den Brink discloses a method of analyzing the performance of a modem connection, comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig 1 & ¶s 87-97); collecting data and other signals passing on the communication link, between the end modems, through the line interface. (See fig 1 & ¶s 87-97)

But the reference of Van Den Brink fails to explicitly teach that determining, by a processor, an information content of one or more data and other signals transmitted between the end modems responsive to data and other signals collected through the

line interface; and displaying information on the modem connection, responsive to the determined information content.

However, Nakamoto does. (See figs. 1A, 2-6 & col. 5, lines 40-49 & col. 3, lines 48-51) Nakamoto discloses a system for testing networks. This system is comprised of testing apparatus, processing unit, and a user interface. The latter may be a typical workstation computer equipped with a central processing unit (CPU) capable of analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding.

Therefore, taking the combined teachings of Van Den Brink, Javitt and Nakamoto as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Webster, as modified by Javitt, in the manner as claimed and as taught by Nakamoto, for the benefit of monitoring network traffic.

The combination of Van Den Brink and Nakamoto discloses the limitations as claimed above, except they fail to teach wherein displaying information on the modem connection comprises providing information on noise levels on the connection and showing cross-references between effects in upper layers and noise levels on the connection at specific times.

However, Zuranski does. (See col. 11, lines 10-29 & col. 14, line 63 – col. 15, line 2) Zuranski suggests that wherein displaying information on the modem connection comprises providing information on noise levels on the connection and showing cross-references between effects in upper layers and noise levels on the connection at specific times.

Therefore, taking the combined teachings of Van Den Brink, Javitt, Nakamoto, and Zuranski as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Webster, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Zuranski, for the benefit of adjusting the data rate.

Re claim 41, the combination of Van Den Brink, Javitt, Nakamoto, and Zuranski further discloses that, wherein the only modem tangible signals transmitted on the connection during the collection of the signals through the line interface are generated by the end modems. (In Van Den Brink, see fig. 1 & ¶ 93)

Re claim 42, the combination of Van Den Brink, Javitt, Nakamoto, and Zuranski further discloses that, wherein at least some of the data and other signals collected through the line interface are generated by at least one of the pair of end modems without the line interface sending acknowledgment signals or any other modem tangible signals to either of the modems. (In Van Den Brink, see fig. 1 & ¶s 93-97)

Re claim 43, the combination of Van Den Brink, Javitt, Nakamoto, and Zuranski further discloses that wherein the processor is not connected to the end modems other than through the line interface. (In Nakamoto, see figs 1A, 2-6)

Re claim 44, the combination of Van Den Brink, Javitt, Nakamoto, and Zuranski further discloses that, wherein collecting data and other signals passing on the communication link comprises collecting during a collection session in which data and other signals are not injected through the line interface onto the communication link, except possibly noise adapted to cause a retrain, injected at specific times. (In Van Den Brink, see fig. 1 & ¶s 93-97)

Claim 45 has been analyzed and rejected w/r to claim 10 above.

Re claim 54, the combination of Van Den Brink, Javitt and Nakamoto fails to explicitly teach that wherein the information context comprises at least one value of a field of the one or more data and other signals.

However, the reference of Nakamoto does teach a central processing unit (CPU) capable of analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding.

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, for the benefit of monitoring network traffic.

Re claim 55, the combination of Van Den Brink, Javitt and Nakamoto fails to explicitly teach that wherein the information content comprises negotiation signal content.

However, the reference of Nakamoto does teach a central processing unit (CPU) capable of analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding. One skilled in the art would know that negotiation signal are well known in the art, and they are mainly used to analyze the connection between the transceivers.

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, for the benefit of monitoring network traffic.

Claims (18, 46-51) are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1) in view of Javitt et al. (hereinafter Javitt) (US Patent 6,002,677), and further in view of Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2)

Re claim 18, Van Den Brink discloses a method of analyzing the performance of a modem connection, comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig 1 & ¶s 87-97); collecting data and other signals passing on the communication link, between the end modems, through the line interface. (See fig 1 & ¶s 87-97)

But the reference of Van Den Brink fails to explicitly teach injecting through the line interface noise which forces a retrain of the modem connection.

However, Downey does. (See fig. 3 & col. 5, lines 1-23) Downey discloses a system for training/re-training the connection of two modems.

Therefore, taking the combined teachings of Van Den Brink and Downey as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, in the manner as claimed and as taught by Downey, for the benefit of providing training to the modems.

The combination of Van Den Brink and Downey discloses the limitations as claimed above, except they fail to teach that wherein the injected noise does not interfere with voice frequency bands of the communication link.

However, Javitt does. (See col. 3, lines 44-47) Javitt discloses that wherein the injected noise does not interfere with voice frequency bands of the communication link. ("prior to using voice committed frequencies" "insert background noise")

Therefore, taking the combined teachings of Van Den Brink, Downey and Javitt as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Downey, in the manner as claimed and as taught by Javitt, for the benefit of precluding any noise from interfering with voice.

The combination of Van Den Brink, Downey and Javitt disclose the limitations as claimed, except they fail to teach determining, by a processor, an information content of one or more data and other signals transmitted between the end modems responsive to data and other signals collected through the line interface; and displaying information on the modem connection, responsive to the determined information content.

However, Nakamoto does. (See figs. 1A, 2-6 & col. 5, lines 40-49 & col. 3, lines 48-51) Nakamoto discloses a system for testing networks. This system is comprised of

testing apparatus, processing unit, and a user interface. The latter may be a typical workstation computer equipped with a central processing unit (CPU) capable of analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding.

Therefore, taking the combined teachings of Van Den Brink, Downey, Javitt and Nakamoto as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Van Den Brink, as modified by Downey and Javitt, in the manner as claimed and as taught by Nakamoto, for the benefit of monitoring network traffic.

Re claim 46, the combination of Van Den Brink, Downey, Javitt and Nakamoto fail to explicitly teach that wherein the information content comprises at least one value of a field of the one or more data and other signals.

However, the reference of Nakamoto does teach analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding. (See col. 5, lines 46-49)

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Downey, Javitt and Nakamoto, for the benefit of optimizing the communication system.

Re claim 47, the combination of Van Den Brink, Downey, Javitt and Nakamoto further discloses that wherein the information content comprises negotiation signal content. (In Nakamoto, see col. 5, lines 46-49. Furthermore, one skilled in the art would

know that information transmitted from one end to another end is comprised of data field and a training field.)

Re claim 48, the combination of Van Den Brink, Downey, Javitt and Nakamoto fails to explicitly teach that using a state machine for keeping track of the state of the modem connection, based, at least partly, on the determined information content.

However, Downey does teach (See col. 5, lines 25-27) a DSLAM software module which repeatedly inquires as to the training status of the modem.

Therefore, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Downey, Javitt and Nakamoto, for the benefit of controlling/testing the modem connection.

Claim 49 has been analyzed and rejected w/r to claim 47.

Claim 50 has been analyzed and rejected w/r to claim 46.

Claim 51 has been analyzed and rejected w/r to claim 48.

3. **Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1) in view of Schneider et al. (hereinafter Scheneider) (US Publication 2004/0095167 A1), and further in view of Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2)**

Re claim 16, Van Den Brink discloses a method of analyzing the performance of a modem connection, comprising: connecting a line interface to a communication link carrying signals of a modem connection, between a pair of end modems (See fig 1 & ¶s 87-97); collecting data and other signals passing on the communication link, between the end modems, through the line interface. (See fig 1 & ¶s 87-97)

But the reference of Van Den Brink fails to explicitly teach injecting through the line interface noise which forces a retrain of the modem connection.

However, Downey does. (See fig. 3 & col. 5, lines 1-23) Downey discloses a system for training/re-training the connection of two modems.

Therefore, taking the combined teachings of Van Den Brink and Downey as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, in the manner as claimed and as taught by Downey, for the benefit of providing training to the modems.

The combination of Van Den Brink and Downey discloses the limitations as claimed above, except they fail to teach that wherein injecting the noise comprises connecting a low impedance circuit, for at least some of the frequency bands carrying signals, to the communication link.

However, Schneider does. (See ¶s 74-75) Schneider discloses that wherein injecting the noise comprises connecting a low impedance circuit, for at least some of the frequency bands carrying signals, to the communication link.

Therefore, taking the combined teachings of Van Den Brink, Downey and Schneider as a whole, it would have been obvious to one of ordinary skills in the art to

incorporate this feature into the system of Van Den Brink, as modified by Downey, in the manner as claimed and as taught by Schneider, for the benefit of not disturbing signals generated by the xDSL modems.

The combination of Van Den Brink, Downey and Schneider disclose the limitations as claimed, except they fail to teach determining, by a processor, an information content of one or more data and other signals transmitted between the end modems responsive to data and other signals collected through the line interface; and displaying information on the modem connection, responsive to the determined information content.

However, Nakamoto does. (See figs. 1A, 2-6 & col. 5, lines 40-49 & col. 3, lines 48-51) Nakamoto discloses a system for testing networks. This system is comprised of testing apparatus, processing unit, and a user interface. The latter may be a typical workstation computer equipped with a central processing unit (CPU) capable of analyzing traffic, filtering traffic, and capturing traffic for analysis and decoding.

Therefore, taking the combined teachings of Van Den Brink, Downey, Schneider and Nakamoto as a whole, it would have been obvious to one of ordinary skills in the art to incorporate these features into the system of Van Den Brink, as modified by Downey and Schneider, in the manner as claimed and as taught by Nakamoto, for the benefit of monitoring network traffic.

4. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Den Brink et al. (hereinafter Van Den Brink) (US Publication 2003/0174765 A1),

Javitt et al. (hereinafter Javitt) (US Patent 6,002,677) and Nakamoto et al. (hereinafter Nakamoto) (US Patent 7,100,091 B2), as applied to claim 53 above, and further in view of Schneider et al. (hereinafter Scheneider) (US Publication 2004/0095167 A1)

Re claim 29, the combination of Van Den Brink, Javitt, and Nakamoto fail to teach a low impedance shorting circuit adapted to short at least some of the frequencies of the communication link, responsive to a command the processor.

However, Schneider does. (See ¶s 74-75) Schneider suggests a low impedance shorting circuit adapted to short at least some of the frequencies of the communication link, responsive to a command the processor.

Therefore, taking the combined teachings of Van Den Brink, Javitt, Nakamoto, and Schneider as a whole, it would have been obvious to one of ordinary skills in the art to incorporate this feature into the system of Van Den Brink, as modified by Javitt and Nakamoto, in the manner as claimed and as taught by Schneider, for the benefit of not disturbing signals generated by the xDSL modems.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEON FLORES whose telephone number is (571)270-1201. The examiner can normally be reached on Mon-Fri 7-5pm Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Examiner, Art Unit 2611
July 14, 2008

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